

## ABSTRACT

A method for producing a cathode active material having superior cell characteristics through single-phase synthesis of a composite material composed of a compound represented by the general formula  $\text{Li}_x\text{Fe}_{1-y}\text{M}_y\text{PO}_4$  and a carbon material positively and a method for producing a non-aqueous electrolyte cell employing the so produced cathode active material. To this end, the cathode active material is prepared by a step of mixing the starting materials for synthesis of the compound represented by the general formula  $\text{Li}_x\text{Fe}_{1-y}\text{M}_y\text{PO}_4$ , a step of milling a mixture obtained by the mixing step, a step of compressing the mixture obtained by the mixing step to a preset density and a step of sintering the mixture obtained by the compressing step. A carbon material is added in any one of the above steps prior to the sintering step. The density of the mixture in the compressing step is set to not less than  $1.71 \text{ g/cm}^3$  and not larger than  $2.45 \text{ g/cm}^3$ .